

LIVE-LEARN CAL POLY

A new-urbanist vision for a more livable and sustainable campus.



Source: Cal Poly, San Luis Obispo

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June 2019

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APPROVAL PAGE

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Live-Learn Cal Poly

A Senior Project

presented to

the Faculty of the City and Regional Planning Department

California Polytechnic State University, San Luis Obispo

In Partial Fulfillment

of the Requirements of the Degree

Bachelor of Science, City and Regional Planning

by

Emily Huang and Justin Wong

June, 2019

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ACKNOWLEDGMENTS

We would like to extend our gratitude to the City and Regional Department at California Polytechnic State University. We would also like to personally thank Dr. Michael Boswell for his hard work as our senior project advisor, who gave us the creative independence to conduct our own work, but never failed to steer us in the right direction when we needed it.

We would also like to take the time to thank Professor Chris Clark and Professor Amir Hajrasouliha of the City and Regional Planning Department for their support and guidance throughout the beginning stages of our project. Having worked on the Cal Poly Master Plan, Professor Chris Clark provided us insight regarding future plans for campus. Professor Amir Hajrasouliha's expertise in campus planning and urban design inspired our land use proposals. Without their valuable input, our project would not have carried through as smoothly.

Finally, we are especially indebted to the rest of the faculty members of the City and Regional Planning Department. During our time here at Cal Poly, our professors have constantly been supportive of our academic and career goals and worked actively to ensure our success. We would not have been able to get this far without their knowledge, patience, and expertise, and we are extremely thankful.

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01

INTRODUCTION

WHAT'S THE USE?

Universities across the nation have begun a mixed-use initiative in an effort to densify campuses and diversify retail and housing choices to increase student residency on campus. The movement to model the built environment after traditional mixed-use urbanism has been shown to improve capital flow within the local submarket on campus, foster flexible learning environments to support student success, and reduce automobile dependency. In order to reflect Cal Poly's Master Plan moving forward (more details in Chapter 2), this report intends to follow the guiding principles outlined in the Master Plan while proposing sustainable and efficient land use designs to accommodate future growth at Cal Poly.

To fully experience the unique qualities of university life, on-campus living is the ideal way to do so. When students live on-campus, they can enjoy a strong sense of community, a more social atmosphere, and increased accessibility to campus amenities and services. With housing, dining, and other necessities taken care of, students can take advantage of the social, educational, and recreational opportunities the campus has to offer. Universities nationwide have revealed the benefits and value for both universities and university students of residential campuses:

- » Greater involvement with campus community
- » Increased opportunities to meet new people and develop lasting relationships
- » Enhanced academic performance
- » Increased capital flow through partnerships with private businesses
- » On campus amenities offer convenience to students

MOVING FORWARD

As the student population of Cal Poly continues to grow, we see the need to propose innovative ideas that would not only provide additional services and amenities, but also create a physical environment that would enhance the student experience. Through new-urbanist land use and design strategies, this report describes the benefits of a mixed-use residential campus in an effort to create a more efficient, sustainable, and livable community to support the student body. Catalyzing mixed-use development will transform the current suburban-like layout of Cal Poly into a amenity-filled community with lively hubs, live-study environments, and additional opportunities for recreation and retail. The rationale behind the mixed-use initiative is driven by the following design objectives:



Efficiency.

The strategic location of services and amenities will make travel between different areas of campus more convenient, promoting trip efficiency on campus. Providing necessary services and amenities on campus that meet the daily needs of students will ultimately reduce the need for students to travel on and off-campus.



Capital Flow.

The addition of new restaurants, commercial, and retail establishments on campus will boost the economy and provide an additional revenue source for Cal Poly. This will also increase the number of job opportunities for students.



Sustainability.

The provision of necessary services and amenities on campus reduces automobile dependency, which aligns with Cal Poly's long-term vision of reducing greenhouse gas (GHG) emissions. Easily accessible on-campus services and recreational opportunities encourages the use of active transportation, encouraging students to lead a healthier and more sustainable lifestyle.



Quality of Life.

Effective placemaking and urban design enhances the quality of life outside classrooms. A variety of housing and retail types that promote opportunities for engagement and building relationships foster a stronger sense of community on campus.

REPORT ORGANIZATION

This report is organized into five chapters. The introductory chapter outlines the methodology as well as the purpose of this report, which revolves around the value of modeling campus expansion and growth after traditional mixed-use new urbanism. The report begins with a thorough analysis of Cal Poly's existing conditions in regards to demographics, growth patterns, and future plans for development. This is followed by an overview of existing planning documents, including the draft Cal Poly Master Plan for 2035, the draft EIR for the Master Plan, as well as a bicycle safety study conducted by Alta Planning + Design. The inclusion of these plans are intended to serve as a guide for the land use proposals.

Chapter Three dives into a overarching description of New Urbanism, as well as case studies of existing American urban

campuses that have already implemented new-urbanist principles. The two campuses, Portland State University and University of Minnesota, Twin Cities are analyzed to understand the dynamic relationship between students, businesses, and its surrounding city on and off campus. Chapter Four reveals the survey results from Cal Poly students. The survey was designed to determine the types of services and amenities students wanted to see more of on campus. The results play a fundamental role in the determination of land uses formulated in Chapter Five. The last chapter contains the land use proposals at two locations on campus that can implement new-urbanist design strategies. Based on existing conditions and planning documents, new-urbanist principles, case studies, and survey results, the proposals at these two locations intend to enhance the student experience, while serving as an example for future land use decisions.

METHODOLOGY

BACKGROUND RESEARCH

In this study, we started by gathering background information about the Cal Poly to better understand the University's population and its needs. We studied the University's long-range planning documents, including the Master Plan and Environmental Impact Report (EIR), as well as Cal Poly's Bicycle Circulation and Safety Study.

CASE STUDY

The report highlights two case studies of similarly structured campuses that incorporate new-urbanist principles into their design. The two campuses we identified are (1) Portland State University and (2) University of Minnesota, Twin Cities. The reason for choosing these two campuses is due to the fact that they are well-integrated into the cities around them. These campuses both provide sustainable ways to move people around and incorporate a mix of uses within the campus. Additionally, these campuses also provide valuable insight on other sustainability strategies and other techniques to make the experience on campus more enjoyable. Additional information about each of these campuses can be found in Chapter Three of this report.

SURVEY

The team also surveyed a random sample of students on campus to identify the main purpose of their trips both on and off campus. Through this survey, the team also gathered data about students' primary mode choices and their reasons for off-campus trips. Additionally, general background information such as year in school, major, and gender were gathered and aggregated to determine if there were any major discrepancies between these groups. Identifying the main reason that people travel on and off campus helped to give us a better understanding of the types of services that the University is not adequately providing.

PROPOSALS

Using information gathered from our campus survey and information from the case studies of other successful new-urbanist campuses, we will first identify the main types of facilities that the campus is not providing based on survey data provided from the students. After identifying these issues, we will then propose these new land uses in strategic areas of the campus to reduce the number of off-campus trips. Providing these facilities will not only decrease the traffic congestion associated with off-campus trips, but properly designing these facilities will also provide a better quality of life for students on campus.



EXISTING CONDITIONS

INTRODUCTION

Chapter Two provides a general overview of the current Cal Poly campus, including location, demographics, and size. It also discusses projected growth and emerging trends the University can expect to experience in the future in regards to student population and new development. Existing planning documents, including the most recent Cal Poly Master Plan and Bicycle Circulation and Safety Study were evaluated to ensure our proposed project remains consistent with the design and development principles discussed in these documents. Ensuring consistency between these documents will also facilitate the implementation of the ideas proposed in this study.

Source: Cal Poly News



CAMPUS OVERVIEW

As a polytechnic university, Cal Poly integrates a “learn by doing” philosophy to offer students hands-on learning experience in and outside classrooms. As of 2017, Cal Poly has a total enrollment of 22,188 students which include both undergraduate and graduate students.

At approximately 9,678 acres, Cal Poly is the largest university in the California State University system. However, most of the land is dedicated to agriculture and open space. The main campus is approximately 1,320 acres, with 155 acres designated as the campus core.

According to the Master Plan, “despite some annual ups and owns, enrollment growth during the past twenty years averaged about 200 students per year. This approximate rate is projected for the next twenty years – to 2035” (Cal Poly, 2017). Figure 2.2 shows a graph representing student enrollment trends. Of the 22,188 students, 54.8% are White, 11.8% are Mexican American, 10.8 % are Asian only, 7.5% are two or more races, 0.1% are Pacific Islander, 0.1% are American Indian, 0.7% are African American, 1.9% are Filipino, 4.9% identify as other Latino, and 5% are unknown (CSU, 2017).

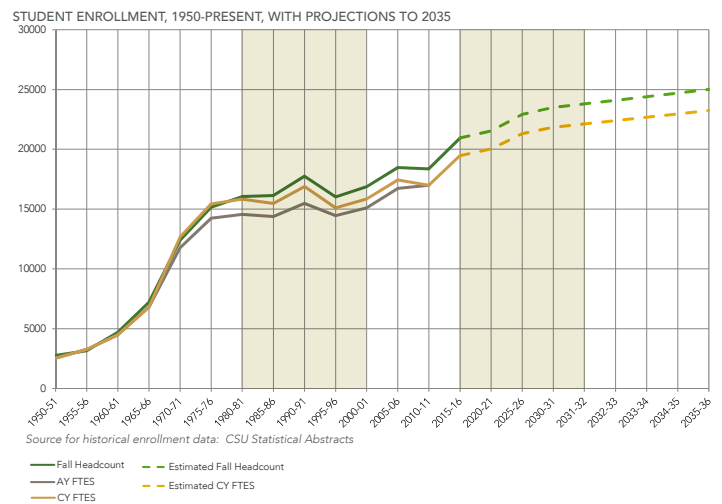
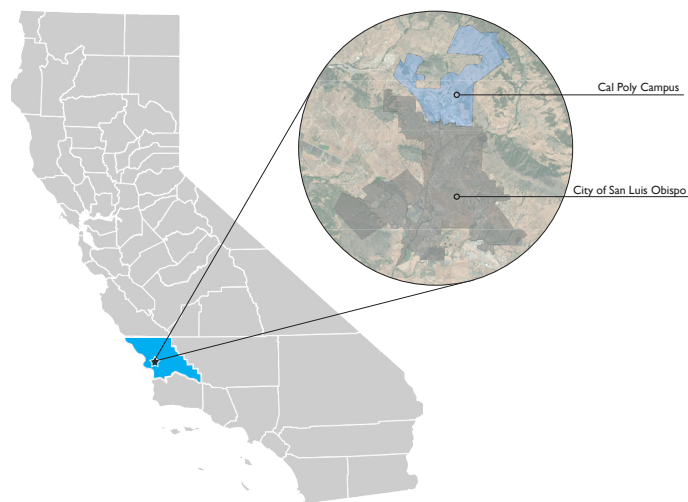
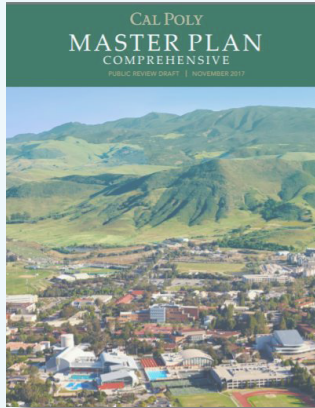


Figure 2.2 Projected student enrollment
Source: Cal Poly Master Plan

Figure 2.1 Regional location map

EXISTING DOCUMENTS



CAL POLY MASTER PLAN (DRAFT 2017)

The Cal Poly Master Plan serves as a comprehensive long-range planning document to guide and plan for projected growth and changing conditions, and implement the University's strategic Vision for 2022. The Master Plan incorporates guiding principles that will direct future development, land use designations, and academic programs for the next two decades to enhance overall student experience. According to the Master Plan, "the campus anticipates growth of the student body, new and replacement academic buildings, additional on-campus housing, event and entertainment spaces, and other support facilities to accommodate growth and changing times." (Cal Poly, 2017). The plan also describes the preparation process and those who were involved. Maps and implementation measures are included to display and prepare for predicted growth and development. The Master Plan lists the foundation and guiding principles and strategic objectives for Cal Poly looking forward:

VISION 2022

FOUNDATION AND GUIDING PRINCIPLES

LEARN BY DOING

STUDENT SUCCESS

EXCELLENCE THROUGH CONTINUOUS
IMPROVEMENT

COMPREHENSIVE POLYTECHNIC UNIVERSITY

MASTER PLAN GOALS

- » Lay out the land use, circulation, and physical development of the campus to educate a future student enrollment of 25,000 headcount (22,500 FTES)
- » Enhance academic quality and student success through Learn by Doing
- » Increase the diversity of students, faculty, and staff
- » Strengthen the campus' compact, cross-disciplinary Academic Core
- » House more students in residential communities on campus
- » Offer more vibrant evening and weekend events and activities on campus
- » Reinforce campus-wide environmental sustainability; and
- » Attain a modal shift from cars to more pedestrian, bicycle, and transit use
- » Generate revenues from public and private sources to realize the above goals

STRATEGIC OBJECTIVES

- » Create a vibrant residential campus that connect academic and social lives and serves as a core of the Cal Poly experience
- » Enhance student success
- » Increase support for teacher-scholar model
- » Create a rich culture of diversity and inclusivity that supports and celebrates the similarities and differences of every individual on campus
- » Secure the financial future of the university
- » Develop a greater culture of transparency, collaboration and accountability with students, faculty, staff, alumni, supporters, and our community

In addition to these objectives, the Master Plan highlights the university's desire to foster a more residential campus community by designating on-campus housing for all first and second-year students. One of the goal states, "the percentage of students living in on-campus housing should be increased and Cal Poly should continue to develop into a livable residential campus, where academic facilities, housing, recreation, social places, and other support facilities and activities are integrated" (Cal Poly, 2017). According to the studies conducted prior to the Master Plan, "data shows that undergraduate students are more successful in completing their degrees if they live on campus for at least two years" (Cal Poly, 2017). Through careful land use designation and design, our project intends to support this initiative towards a more residential campus community.

Another notable element of Cal Poly's Master Plan is to maintain a 10-minute walking radius within the campus core. The purpose of maintaining this radius is to encourage active transportation within the main campus. Additionally, most of the campus core has been closed off to private automobiles, limiting campus access to delivery vehicles and accessibility vehicles. Due to the

University's commitment to maintain this 10-minute walking radius, any expansion or growth of the University will likely be directed inwards towards improving what already exists within the campus core.

Just like the overarching goal of the Cal Poly Master Plan, our proposal aims to enhance student experience and assist in the reinforcement of the University's Learn by Doing approach to education through careful design of urban space (Cal Poly, 2017). Our proposal will remain consistent with the Master Plan's guiding principles and strategic objectives, and will use these documents to serve as the basis for our proposals.



**Draft
Environmental Impact Report**

Master Plan 2035

California Polytechnic State University,
San Luis Obispo

CAL POLY
SAN LUIS OBISPO

November 2017

CAL POLY MASTER PLAN 2035 - DRAFT ENVIRONMENTAL IMPACT REPORT (2017)

The Draft Environmental Impact Report (EIR) prepared for the Master Plan analyzes the potential environmental impacts related to the implementation of the Master Plan. It provides valuable data and statistics pertaining to campus growth, housing needs, and transportation patterns.

Table 2.1 Number of on-campus beds and percent of students living on campus

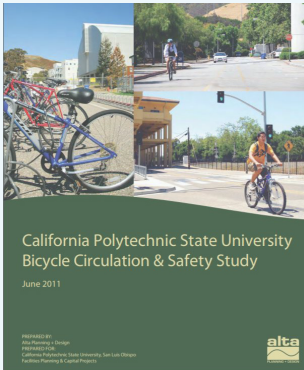
Year	On-campus Beds	Student Enrollment (Fall)	Percent of Students Living On-Campus
2000	3,737	16,877	22.1%
2001	3,737	18,079	20.7%
2002	3,737	18,453	20.3%
2003	3,737	18,303	20.4%
2004	4,540	17,582	25.8%
2005	4,540	18,475	24.6%
2006	4,540	18,722	24.2%
2007	4,540	19,777	23.0%
2008	4,540	19,471	23.3%
2009	5,868	19,325	30.4%
2010	7,200	18,360	39.2%
2011	7,200	18,762	38.4%
2012	7,200	18,679	38.5%
2013	7,200	19,703	36.5%
2014	7,200	20,186	35.7%
2015	7,200	20,944	34.3%
Change (2000 to 2015)	3,463	4,067	
Percent Change (2000 to 2015)	92.7%	24.1%	

Table 2.1 shows the number of on campus beds and percent of students living on campus from 2000 to 2015. As documented, there is a steady increase in student enrollment, and it can be assumed that student enrollment will continue to rise in the near future. The sharp increase of percent of students living on-campus from 2009-2010 was a result of the opening of Poly Canyon Village.

We can observe a slight downward trend in the percentage of students living on campus between 2010 and 2015. Although not indicated in this table, the new dorms that recently opened fall of 2018 have enough bed spaces to accommodate an additional 1,475 freshmen.

Thus, the goal of our proposals aim to increase the percentage of students living on campus by providing additional housing in a mixed-use setting.

Source: Cal Poly Master Plan 2035 Draft EIR; California Polytechnic State University, San Luis Obispo, Institutional Planning and Analysis; CSU Statistical Abstract (2000-2016); SLOCOG Regional



CAL POLY BICYCLE CIRCULATION AND SAFETY STUDY (2011)

Prepared by Alta Planning + Design in June 2011, the Cal Poly Bicycle Circulation and Safety Study analyzes and evaluates existing bike routes, collision data, and proposed plans to conduct a thorough study of bicycle efficiency and safety throughout campus. The study includes maps and tables that also showcase data in nearby areas off campus.



Figure 2.3 Bicycle and pedestrian opportunities and constraints
Source: Cal Poly Bicycle Circulation and Safety Study

The study also identifies opportunity areas where connectivity can be improved while reducing bicyclist and pedestrian conflict. Figure 2.3 was taken from the study to reveal opportunities and constraints. The selected sites include:

- » Poly View Drive and Perimeter Road
- » Grand and South Perimeter
- » California and Path on O'Neill Green
- » Via Carta, North Poly View Drive, and North Perimeter Road

Physical constraints to expanding bicycle infrastructure were also discussed. Gaps, on-street parking, physical barriers, and topography were several constraints that challenged the expansion of the campus' existing bicycle network.

The study also includes recommended improvements for bikeways, intersections, and bicycle facilities to establish a more efficient and comprehensive bicycle network throughout campus. Therefore, the study's recommendations will be taken into consideration when developing our land use proposals.



CASE STUDIES

INTRODUCTION

New Urbanism has been an integral component of modern day planning and design. In addition to cities and neighborhoods, universities throughout the United States have also integrated new-urbanist principles to promote a healthier and more sustainable campus for students and staff. This chapter provides a general overview of New Urbanism and analyzes two universities that have proven to be successful in implementing new-urbanist design strategies.

Portland State University and University of Minnesota were chosen as example campuses that have effectively incorporated New Urbanism principles while planning for future growth and development. These universities also share several similarities with Cal Poly in regards to size, location, and relationship with their surrounding city.

NEW URBANISM DEFINITION

“NEW URBANISM promotes the creation and restoration of diverse, walkable, compact, vibrant, mixed-use communities composed of the same components as conventional development, but assembled in a more integrated fashion, in the form of complete communities. These contain housing, work places, shops, entertainment, schools, parks, and civic facilities essential to the daily lives of the residents, all within easy walking distance of each other. New Urbanism promotes the increased use of trains and light rail, instead of more highways and roads. Urban living is rapidly becoming the new hip and modern way to live for people of all ages.” (newurbanism.org)

DESCRIPTIONS OF NEW URBANISM PRINCIPLES

Walkability. The first principle of New Urbanism encompasses the ease of access for pedestrians to go between work and home, which is preferably a 10 minute trip by foot. Walkability also focuses on pedestrian-friendly streetscape, such as planting vegetation along streets, transparency of building facades, and road dieting to slow traffic. Overall, walkability revolves around pedestrian safety, comfort, and accessibility.

Connectivity. Connectivity refers to the the interconnectedness of a street network. Street grids that have exceptional connectivity disperses cars and other vehicular modes of transportation, and creates a convenient and comfortable walking environment. Street networks should consist of a hierarchy of street types, such as boulevards and alleys.

Mixed-Use and Diversity. This principle entails providing a mix of uses and densities to bring life into areas during different hours of the day. Diversity also refers to people in regards to creating inclusive spaces to accommodate and celebrate different age groups, income levels, cultures, and ethnicities.

Mixed Housing. A range of types, sizes and prices of housing in close proximity of each other can create an environment that encourages diversity, social life and a more engaging atmosphere.

Quality Architecture and Urban Design. The architecture and urban design of spaces is critical because it affects the way people feel and perceive the space around them. Creating vibrant and cohesive spaces also affects the safety and quality of life in those spaces.

Traditional Neighborhood Structure. A traditional neighborhood structure revolves around transect planning. This entails discernable centers and edges, and a high density urban core with a progression to lower densities as you move further away from the town center. A variety of uses and densities should be within a 10-minute walk. The relationship and balance between the built and natural environment moving away from the core is also important to consider.

Increased Density. Increased density includes the placement of land uses including residential, commercial within close proximity. Having less space between each building creates a more efficient network of amenities, which can ultimately reduce the length of trips that people need to take.

Green Transportation. Green transportation involves a high-quality transportation network that enables people to easily use clean modes of transportation. This includes the improvement of walking and biking conditions, efficient public transit, and other incentives for people to use clean vehicles. Improving the experience of clean transportation can include weather protection, safety improvements, and other ways to decrease travel time.

Sustainability. Sustainability is incorporated into all levels of planning, including design, development, and operation. The purpose of sustainability is to ensure the protection of the environment by minimizing negative impacts associated with development and growth. Sustainable strategies include utilizing energy-efficient technology, creating walkable spaces to reduce the need to drive, and using less finite fuels.

Quality of Life. The fusion of the principles listed above all contribute to fostering livable, sustainable places that enhance the quality of life.



Source: The Climate Trust

PORTLAND STATE UNIVERSITY - PORTLAND, OREGON

BACKGROUND

Portland State University (PSU) is located in Portland, Oregon. PSU is situated near the heart of downtown, and serves as an “anchor institution” by providing job opportunities for both students and community members investing in capital projects for the city. PSU is considered a large urban research university with a population of over 28,000 undergraduate and graduate students, with a growth rate of 5.4% each year (PSU, 2010). Although the majority of the students are from Portland, there has been a large increase in out-of-state and international applicants. PSU spans over 4.5 million gross square feet of space across 49 acres in the University District (PSU, 2010). The I-405 separates the campus from surrounding residential neighborhoods to the west and south. Approximately 7% of students live on campus, with the majority of students commuting from surrounding neighborhoods. Those who commute usually take transit, bike, or walk.

According to the The PSU University District Framework Plan (2010), PSU’s strategies for future growth include incorporating sustainable urban design principles and establishing multiple partnerships with the city and private enterprises. The University’s efforts to incorporate sustainable designs and strategies to accommodate growth reflect principles of New Urbanism.

NEW URBANISM PRINCIPLES

Walkability. PSU and the City of Portland recently collaborated to invest in sidewalk expansion and repavement, street furniture and vegetation, signage, and art installations to supplement the expansion of Portland’s light rail system to campus. PSU has also renovated plazas and added water features to further enhance the aesthetics and improve the pedestrian experience on campus. The PSU University District Framework Plan has identified major streets for sidewalk widening and revitalizing efforts to create more spaces for students to relax and socialize. The location of university housing near transit has made it very convenient for students to not only travel within campus, but also outside of campus and into the City. In addition to physical changes made to the streetscape to improve pedestrian linkage, Portland Bicycle Transportation Alliance (BTA) has formulated passive strategies to encourage and incentivize bicycling and walking with a month long Bike + Walk Challenge.

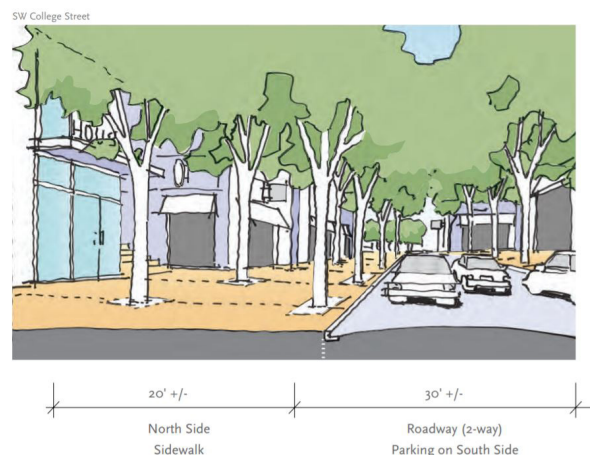


Figure 3.1. Wide sidewalks that promote walkability
Source: PSU University District Framework Plan

Connectivity. Since PSU is situated in downtown Portland, the campus has made an effort to maximize connectivity between the campus and the City. One example of this is “Park Blocks”, which are open spaces intended to serve as green organizing corridors between campus and downtown. The roads and pathways in and around PSU vary in size to accommodate pedestrians, bicyclists, and cars. Restricted vehicular access on certain streets allow for uninterrupted linkages for pedestrians between park blocks, downtown, and the campus core. Pedestrian sky bridges have also been constructed on campus to connect important buildings.

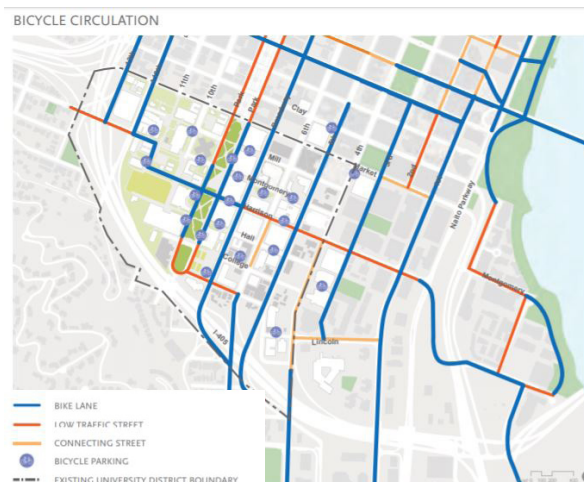


Figure 3.2 Connected bicycle network
Source: PSU University District Framework Plan

Mixed-Use and Diversity. PSU incorporates a variety of mixed-use type buildings in and around campus. Their University District Framework Plan emphasizes the seamless integration of campus and the city through a fusion of both mixed and shared uses amongst public and private entities, including private offices, businesses, and residences. PSU has also endorsed a “living/learning center” on campus to include a “diverse mix of uses including housing, retail, and other student support spaces, both public and private” that will complement the SW 5th and SW 6th Avenue transit corridor. A proposed park would also provide a node for students as well as the public to engage in recreational activities.

Moreover, their 2016-2020 Strategic Plan and 2012 Diversity Action Plan embraces the value diversity and equity in learning environments. Examples of initiatives that address inclusivity mentioned in their Strategic Plan include:

- » Develop and utilize an equity lens in campus decision-making.
- » Train faculty to incorporate diversity elements in their courses.
- » Increase international and cross-cultural perspectives on campus and in the classroom.
- » Create opportunities for international and intercultural engagement in existing campus housing, cultural and recreation programs.

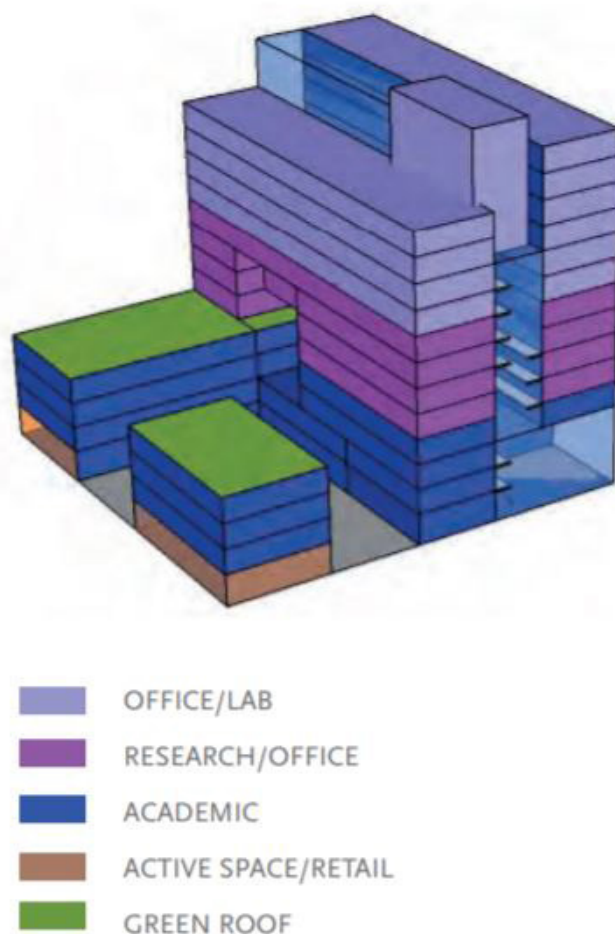


Figure 3.3 Mixed-use building example
Source: PSU University District Framework Plan

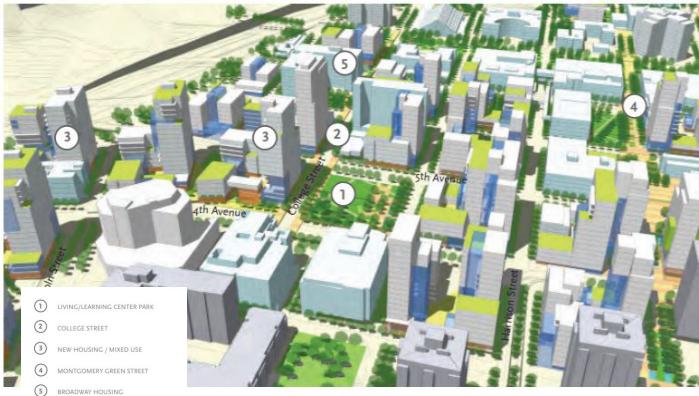


Figure 3.4 Mixed housing types
Source: PSU University District Framework Plan

Mixed Housing. Most students who attend PSU commute from surrounding neighborhoods. However, on-campus housing varies in density and styles. Surveys have been conducted that revealed students' desires for PSU to transition to a more traditional university with more on-campus housing. PSU plans on adding more on-campus as well as off-campus housing to accommodate future growth. They also plan on broadening housing types, such as including family-friendly dwellings, and clustering residential buildings near transit stops. The University Housing Office currently manages ten residential buildings downtown. These buildings differ in size and type to accommodate a wide array of students and their families.

Quality Architecture and Urban Design. Buildings on campus encompass a variety of architectural styles, creating an interesting and engaging environment for the campus community. These styles range from brick to modernist, and are homogeneous in height. Newer buildings preserve the City's history, while making an effort to reduce their environmental impacts through LEED standards. PSU aims renovate a few existing buildings through the lens of effective urban design strategies to establish a stronger sense of place and improve wayfinding. This includes providing additional signage, enlarging windows for transparency, and buffering harsh edges with street furniture.



Figure 3.5 PSU urban core
Source: Walker Macy

Traditional Neighborhood Structure. Although universities differ from city neighborhood structures in regards to scale, the layout of PSU still reflects this new-urbanist principle. PSU includes a campus core that serves as the urban center. The campus core consists of many public open spaces, shared community and recreational uses, and retail and commercial buildings. Lower density development, including residential housing, is located closer to the edge of campus, but still remains within walking distance to the campus core.

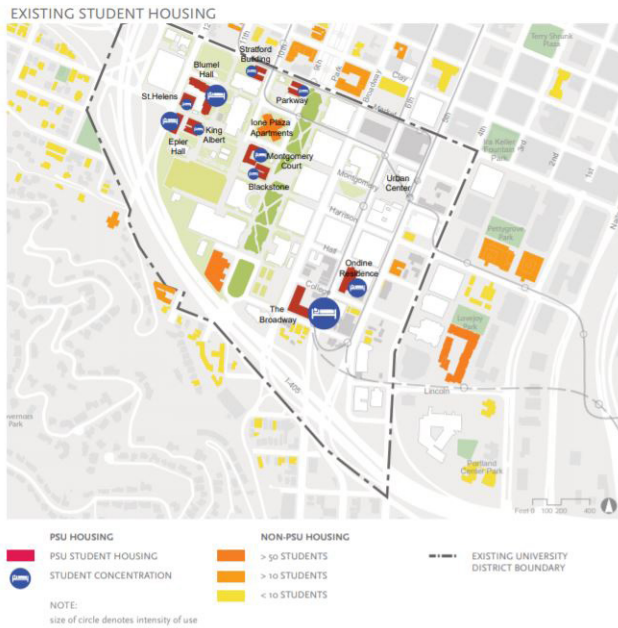


Figure 3.6 Housing in relation to campus core
Source: PSU University District Framework Plan

HEIGHT BONUSES

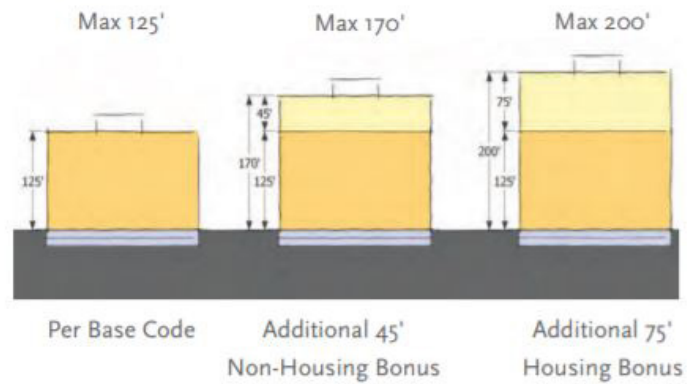


Figure 3.7 Increased density
Source: PSU University District Framework Plan

Increased Density. In order to provide enough housing for projected student growth, PSU is planning on increasing density and floor-to-area ratios by increasing height allowances, especially near transit stations. PSU also proposes the creation of an overlay district for campus to allow for the flexibility to create a mixed-use district consisting of a variety of land uses.

Green Transportation. PSU is served by Portland's light rail and bus system. The majority of students who commute to and from school take public transit or alternate modes of active transportation. PSU has also developed a Climate Action Plan (2010), with a plan to neutralize carbon emissions by 2040. The CAP included activities and programs to reduce automobile dependency through outreach and investing in transit, bicycle, and pedestrian infrastructure.

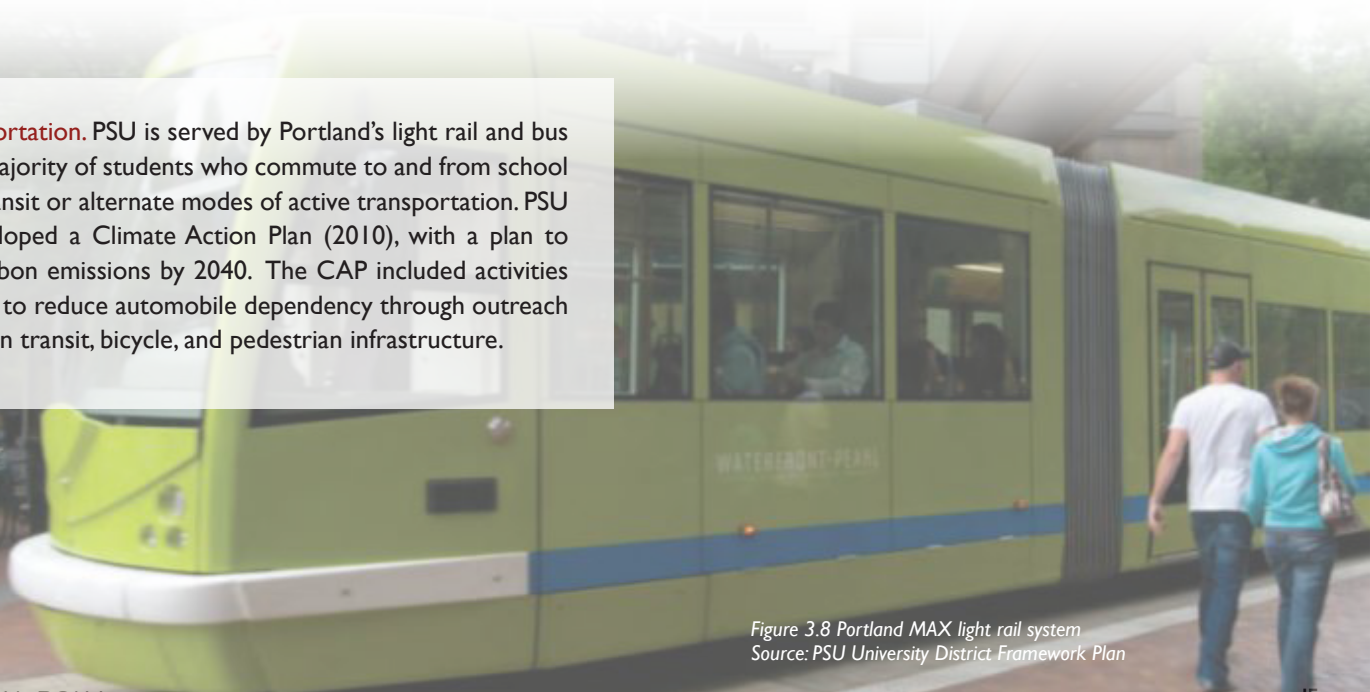


Figure 3.8 Portland MAX light rail system
Source: PSU University District Framework Plan

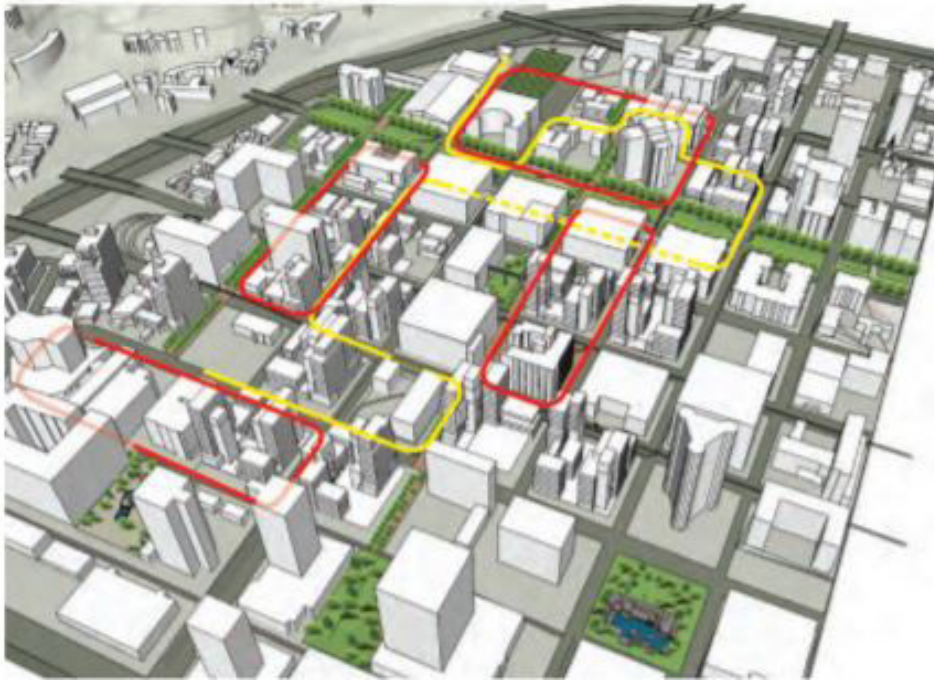


Figure 3.9 EcoDistrict energy loops
Source: PSU University District Framework Plan

Sustainability. As seen consistently throughout the university's Climate Action Plan, Strategic Plan, and University District Framework Plan, PSU is committed to integrating economic, cultural, and environmental sustainability in and outside of its classrooms. PSU has collaborated with EcoDistrict Initiative in an effort to facilitate sustainable neighborhood development. PSU's location is prime for implementing methods to expand transportation options, as well as improve building and infrastructure to improve efficiency and reduce resource consumption.

Quality of Life. The urban form and fabric of PSU reflect the university's dedication to student success. Through smart building and design decisions, the integration of all these principles listed above strives to improve the campus community's overall quality of life.



Figure 3.10 Quality of Life
Source: PSU University District Framework Plan



UNIVERSITY OF MINNESOTA, TWIN CITIES - MINNEAPOLIS, MN

BACKGROUND

University of Minnesota is a public university located in Minneapolis, Minnesota. The University is 1,209 acres and is connected to downtown Minneapolis via multi-modal bridge. As of Fall 2017, the total enrollment totaled 47,568. (University of Minnesota, 2017) This figure includes undergraduate, graduate, and professional enrollment. Of the University's 47,568 students, 7,197 are international students. Currently, 65 percent of students travel to the campus via a sustainable mode, which includes walking biking, and any form of public transportation.

In recent years, the University has worked closely with the City of Minneapolis to improve connectivity to and from the Twin Cities campus. They have invested heavily on improving the overall quality of the University's active transportation and public transportation network. Most notably, in 2011, in conjunction with the City of Minneapolis, the University completed a pedestrian bridge on Washington Avenue that connects the University to its downtown. This case study will highlight some of the considerations and infrastructure investments that the University has made to create a healthier and more sustainable campus.

NEW URBANISM PRINCIPLES

Walkability. During recent years, UMN Twin Cities has made significant efforts to improve the overall pedestrian and bicycle experience. In 2011, UMN was awarded the Platinum award for Bicycle Friendly University for its exceptional level of detail put into integrating the campus with the City's bicycle transportation network. Many improvements have been made to pedestrian and bicycle paths, to promote active transportation and improve the pedestrian and bicycle experience. Bridges and separated bikeways have been constructed for bikes while an underground tunnel network provides a way to get around campus during snowy or rainy days.



Figure 3.11 Biking & Gopher Way System
Source: University of Minnesota, Parking and Transportation Services

Connectivity. In 2011, the Washington Ave bridge was converted from an automobile bridge to a mixed-mode bridge that provides access for bicycles and light rail trains. The bridge was reduced from two travel lanes in either direction to only one travel lane in order to create space for center-running light rail vehicles on the METRO Green Line. The METRO Green line currently runs between downtown Minneapolis and St. Paul with an intermediate stop on the UMN Campus.



Figure 3.12 Washington Avenue Bridge
Source: Dr. Michael Boswell



Figure 3.13 Washington Avenue commercial corridor
Source: University of Minnesota, Parking and Transportation

Mixed-Use and Diversity. Washington Avenue is the main east-west corridor that runs through the University's campus. This centrally located commercial corridor provides a broad range of land uses, ranging from lecture halls and research buildings to retail stores and eating establishments. This street is closed to automobiles, and provides an excellent environment for social life.

The U of M offers students living on campus the opportunity to become a part of a Living and Learning Community. These communities are groups of like-minded individuals who wish to explore college, culture, and community together in their residence halls. U of M students also have the opportunity to become involved with nine student-run cultural centers and over 200 cultural student groups, from the African to the West Indian Student Associations (University of Minnesota, n.d.).

Mixed Housing. 88 percent of freshman students currently live on campus with options for students to live off-campus. One of the master plan objectives is to provide and "reinvest in near-campus housing initiatives that meet the needs of members of the university community. Although the specific uses were not directly mentioned, the Campus Development Framework emphasizes that one of the University's priorities is to promote mixed-use development and integrate the campus with its community edges.



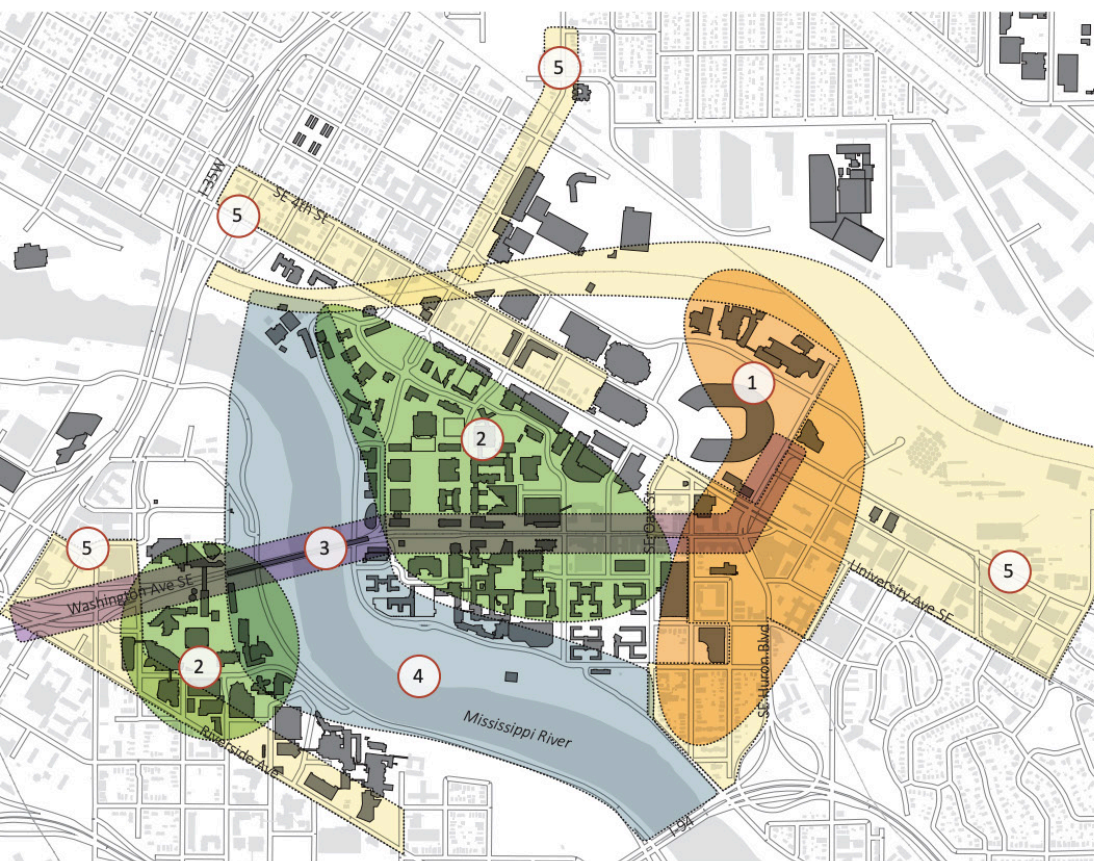
Figure 3.14 Washington Avenue commercial corridor (2)
Source: University of Minnesota, Parking and Transportation Services

Quality Architecture and Urban Design. The University has implemented many goals into the campus master plan to create enjoyable spaces within the campus. Some of these goals include the prioritization of human scale medium-density development. According to the master plan, “because human comfort is essential to the attractiveness, vitality, and safety of a place, we must focus appropriate development intensity at a scale that promotes healthy interaction.” Some other goals that the University is currently striving for is to create a cohesive, memorable system of public spaces. Additionally, the University wishes to engage the river by creating new physical and visual connections, designing riverfront open space sites, and orienting new buildings to take advantage of its visual aesthetics.



Figure 3.15 Riverfront

Source: University of Minnesota, Campus Development Framework



- 1 ADVANCE OUTREACH MISSION**
 - Prioritize human scale medium-density development.
 - Improve the pedestrian experience.
 - Connect the AHC and the BDD.
 - Locate clinical and potential new hospital.
 - Acquire land strategically.
- 2 REINVEST IN THE CAMPUS CORE**
 - Prioritize the pedestrian experience.
 - Locate collaboration spaces in ground floors.
 - Maintain density.
 - Improve path and open space connectivity.
 - Design to discourage car use in campus core.
 - Ensure safe paths, open spaces, and entries.
- 3 REINFORCE THE TRANSIT CORRIDOR**
 - Prioritize mixed-use development.
 - Activate the street edge.
 - Stitch together East and West Banks.
 - Design a pedestrian-friendly environment.
 - Create a distinct identity.
- 4 ENGAGE THE RIVER**
 - Create new physical and visual connections.
 - Design riverfront open space sites.
 - Design buildings with dual river and campus faces.
 - Develop housing to support student experience.
- 5 INTEGRATE CAMPUS AND COMMUNITY EDGES**
 - Participate in efforts in joint planning areas.
 - Define land use patterns and density in context.
 - Determine new build sites and decommission/demolition candidates.
 - Improve safe routes to and through campus.

Figure 3.16 Riverfront Plan Map

Source: U of M Twin Cities, Campus Master Plan

Traditional Neighborhood Structure. The school is focusing on the development of stable on-campus neighborhoods and is working to reinforce relationships between the campus and adjacent neighborhoods.

Increased Density. The campus core is designed in a compact and organized way that allow pedestrians to travel comfortably between destinations. Having a compact campus also helps to support the university's policy of discouraging private automobile use in the campus core. The vehicles on campus are normally limited to service, delivery, and paratransit vehicles. Private automobiles are also accommodated for ADA accessibility. Discouraging automobile use on campus and reducing the distance between destinations encourages active transportation and ensures that the outdoor spaces between buildings are active and lively.

Green Transportation. Frequent, convenient, and reliable light rail service has recently been made available to students and faculty at the University along the Washington Avenue commercial corridor. This new light rail service provides accessibility to high volume destinations such as Minneapolis and St. Paul. The university has also closed a five-block portion of Washington Avenue that runs through campus to foster a more bicycle and pedestrian friendly environment. Over the years, the university has continued to focused on improving public transportation and active transportation options to increase people's propensity to choose these sustainable modes.

Sustainability: In December 2012, the University of Minnesota released an annual report on sustainability. In December 2011, the Twin Cities Sustainability Committee developed a plan to cutting greenhouse gas emissions in half by 2021 and reduce them to zero by 2050. (Sustainability Annual Report) Additionally, the campus developed a stormwater master plan, which manages stormwater on a district and campus basis rather than building to building.



Figure 3.17 St. Paul zoning map
Source: Minn Post

Primary Mode of Transportation to Campus Proportionally Weighted University Population

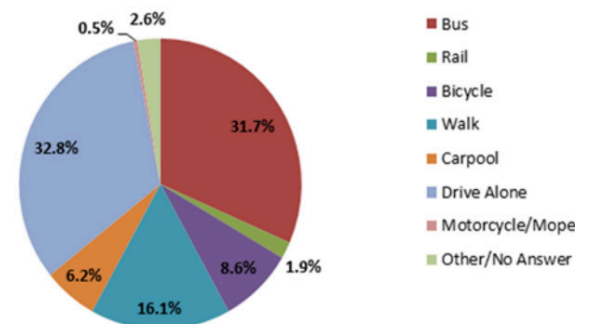


Figure 3.18 Mode split pie chart
Source: University of Minnesota, Sustainability Annual Report

Quality of Life. All of the previous principles work together to improve the quality of life of the students. The university has worked to design a campus that takes advantage of its natural surroundings and works to protect the environment and promote student health,



Figure 3.19 Biking in University of Minnesota
Source: University of Minnesota, Center for Transportation Studies



Figure 3.20 Student work on the Washington Avenue Bridge
Source: Dr. Michael Boswell



Source: Energy News Network

KEY TAKEAWAYS

PORTLAND STATE UNIVERSITY

PSU's urban design and form can serve as a great example of how New Urbanism principles are implemented at a smaller scale. The seamless integration and connectivity between downtown and campus has proven to be a very successful approach to increasing PSU's presence with the rest of the Portland community. This interconnectedness fosters a more diverse, interesting, and efficient way of life that both residents and students can benefit from. The ease of access to transit and other modes of active transportation, as well as the availability of retail goods and services are goals Cal Poly should strive for.

UNIVERSITY OF MINNESOTA

Together, U of M's commitment to campus design, clean transportation, and cultural diversity works to improve the quality of life of all its students. The commercial strip on Washington Avenue serves as a great example of how a university's investments in clean transportation, mixed use, and urban design can help to create a lively and vibrant university. Additionally, the University's bicycle friendly attitude has resulted in the development of an efficient bicycle network that has awarded the University with a well-deserved Platinum Bicycle Friendly University.

04

STUDENT SURVEY

INTRODUCTION

Outreach is paramount in any planning project, and is especially valuable when trying to understand public opinion. In order to gain an accurate snapshot of Cal Poly students, we wanted to ensure that the survey was designed in a way that allows us to gain a thorough understanding of the student body. The survey was meant to give us a starting point by gathering student opinions on existing land uses at Cal Poly and identify potential areas for improvement.

STUDENT SURVEY

The survey was created on SurveyMonkey and distributed online via social media (Facebook) and email. A total of 63 responses were collected. The survey results are summarized below.

QUESTION 1: INFORMED CONSENT

Question 1 informed respondents about the purpose of the project and asked for their voluntary participation. Those who indicated their agreement completed the survey.

QUESTION 2: WHICH RACE/ETHNICITY BEST DESCRIBES YOU?

Question 2 asked participants to state their race and ethnicity. The purpose of this question was to analyze for any potential racial or ethnic bias in the responses to any of the questions. No significant bias was found. 9 out of 63 respondents omitted this question. Of the 54 participants who answered this question, 30% (16 out of 54) identified as Asian/Pacific Islander, 2% identified as Hispanic (1 out of 54), 59% (32 out of 54) identified as White/Caucasian, and 9% identified as some other race (5 out of 54).

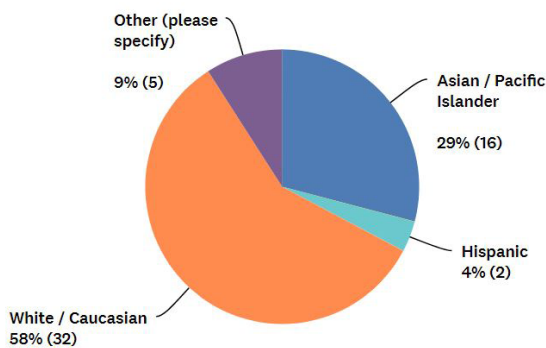


Figure 4.1 Question 2: Race and ethnicity

QUESTION 4: WHAT IS YOUR COLLEGE?

Question 4 asked participants about their respective college and major. 8 out of 63 respondents omitted this question. Out of the 55 participants who answered this question, 9% (5 out of 55) are from the Orfalea College of Business, 36% (20 out of 55) are from the College of Architecture and Environmental Design, 24% (13 out of 55) are from the College of Agriculture, Food and Environmental Services, 15% (8 out of 55) are from the College of Engineering, 13% (7 out of 55) are from the College of Liberal Arts, and 4% (2 out of 55) are from the College of Science and Mathematics.

QUESTION 3: WHAT YEAR ARE YOU?

Question 3 asked participants about their current year or grade in school. 8 out of 63 respondents omitted this question. Out of the 55 participants who answered this question, 55% (30 out of 55) are first years, 15% are second years, 9% (5 out of 55) are third years, 13% (7 out of 55) are fourth years, 7% are fifth years, and 2% (1 out of 55) are sixth years or greater.

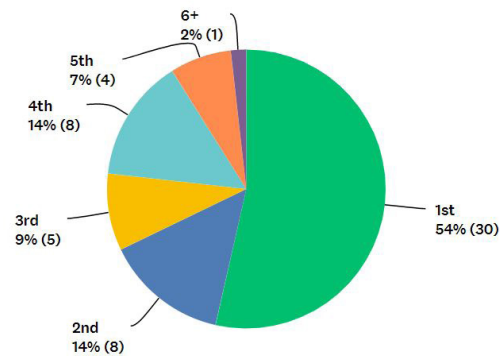


Figure 4.2 Question 3: Student year

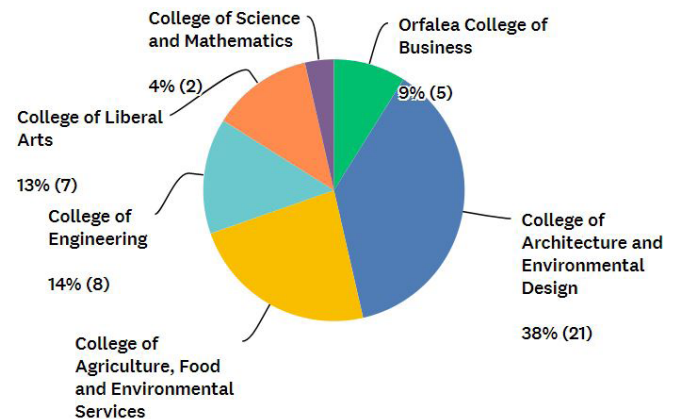


Figure 4.3 Question 4: College

QUESTION 5: DO YOU LIVE ON CAMPUS?

Question 5 asked participants whether or not they live on campus. 8 out of 63 respondents omitted this question. Out of the 55 participants who answered question 5, 65% (36 out of 55) claimed that they live on campus, and 35% (19 out of 55) claimed that they lived off campus. Students who live on campus tend to have a heavier reliance on university services. For the purpose of this study, we wanted a higher portion of on-campus residents, which is reflected in the survey data.

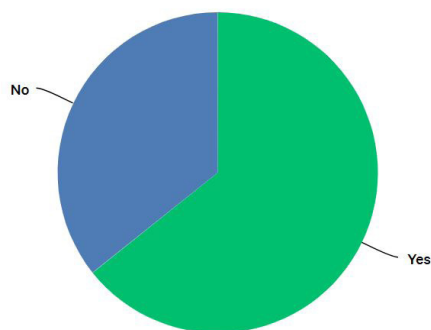


Figure 4.4 Question 5: Live on campus

QUESTION 6: WHERE DO YOU LIVE?

Question 6 goes more in depth regarding student housing. If participants lived on-campus, they were asked to specify which dorms or apartments they live in. Otherwise, they were to mark that they lived off-campus. Out of the 55 respondents, 33% (18 out of 55) lived off campus. A total of 37 respondents claimed that they live on campus. Out of the 37 who live on campus, 5% (2 out of 37) live in Poly Canyon Village (PCV), 5% (2 out of 37) live in Cerro Vista Apartments, 3% (1 out of 37) live in North Mountain, 49% (18 out of 37) live in the Red Bricks, 16% (6 out of 37) live in Yak?it'ut'u, and 22% (8 out of 37) live in the Towers (Sierra Madre/Yosemite).

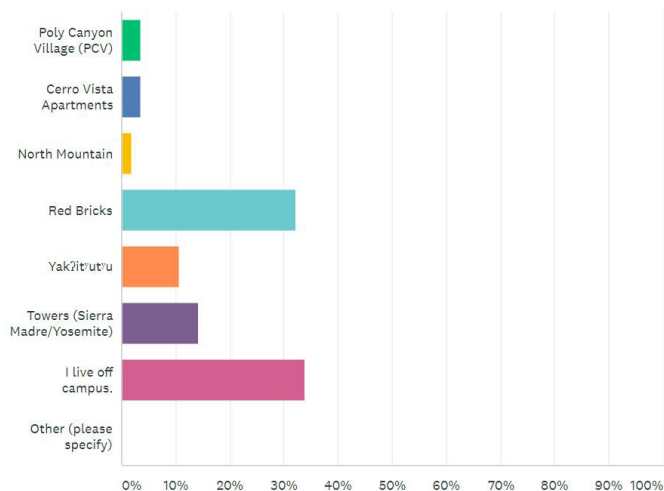


Figure 4.5 Question 6: Housing location

QUESTION 7: WHAT IS YOUR PRIMARY MODE OF TRANSPORTATION TO AND FROM CAMPUS?

Question 7 asked participants about their primary travel mode on and off campus. Out of the 55 participants, 16% (9 out of 55) drive alone, 2% (1 out of 55) carpool, 53% (29 out of 55) walk, 9% (5 out of 55) bike, 18% (10 out of 55) take the bus, and 2% (1 out of 55) use Uber/Lyft to travel to and from school.

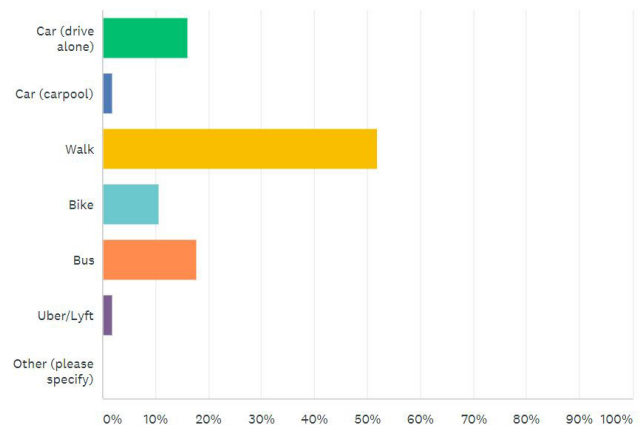


Figure 4.6 Question 7: Primary mode of transportation to and from campus

QUESTION 8: WHY AND HOW OFTEN DO YOU LEAVE CAMPUS?

Question 8 asked participants the reason and frequency of off campus travel. The findings are shown in figure 4.7 below.



Figure 4.7 Question 8: Reason and frequency of off campus trips

QUESTION 9: RANK THE AMENITIES YOU WOULD LIKE TO SEE ON CAMPUS FROM 1 (MOST IMPORTANT) TO 8 (LEAST IMPORTANT).

Question 9 asked participants to rank the amenities they would like to see on campus. Most notably, 85% of participants (47 out of 55) ranked dining as one of their top 3 most important amenities on campus. 40% of participants (22 out of 55) ranked public transit as one of their top 3 priorities, and another 40% (22 out of 55) participants ranked study spaces as one of their top three most important amenities. The results are summarized in the figure below.

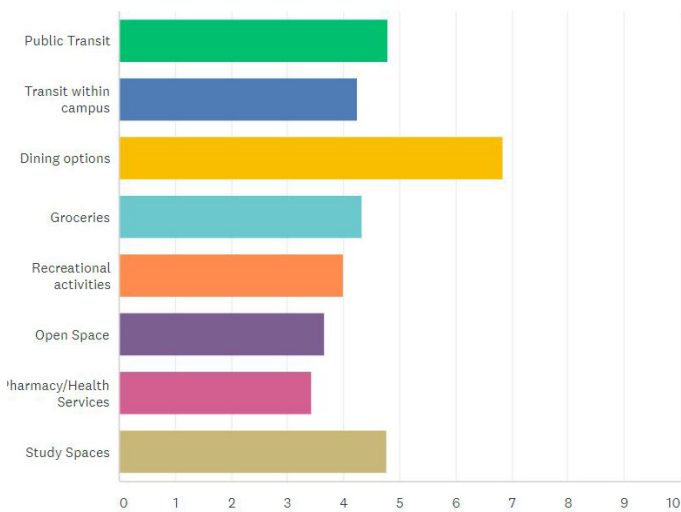


Figure 4.8 Question 9: Amenities and services ranked

QUESTION 10: ADDITIONAL COMMENTS

Question 10 asked participants if they had any additional comments to contribute. Respondents who provided additional comments discussed providing transit between bus stop and PCV, adding more affordable groceries and dining options, and providing a larger supply of housing in order to lower cost of living.

KEY TAKEAWAYS

The results from the survey will be taken into consideration when developing land use proposals, which will be covered in the next chapter. According to the responses, the top services students would like to see include additional dining options, study spaces, and public transit.



LAND USE PROPOSALS

INTRODUCTION

Cal Poly recognizes the need to innovate future development to enhance the student experience. Although the Master Plan does not incorporate much mixed-use in future development plans, the integration of mixed uses throughout campus would still remain consistent with the University's educational mission and long term vision for growth. Thus, implementation measures listed in the Master Plan should consider the incorporation of new-urbanist design principles. This chapter identifies two specific locations on campus that serve as examples of how new-urbanist design principles can be integrated into buildings and public spaces. The designs associated with these locations also reflect the four design objectives established in Chapter 1: Efficiency, Sustainability, Capital Flow, and Quality of Life.

NEXT STEPS

The current land use distribution on campus closely resembles a typical American suburb: housing is concentrated on the outskirts of campus, while the campus core is situated in the center. Although universities are smaller in scale compared to cities, the hierarchical order of land use limits accessibility, discourages walkability, and creates a distinct separation of land use types. Figure 5.1 shows Cal Poly's proposed future land uses from the Master Plan.

The proposed distribution of land still remains relatively fragmented - housing is still situated on the outskirts of campus rather than integrated through the campus core. Just like cities, universities should consider how different elements support one another. We will focus on two opportunity sites in which mixed-use housing can be feasibly incorporated.

LAND USE MAP

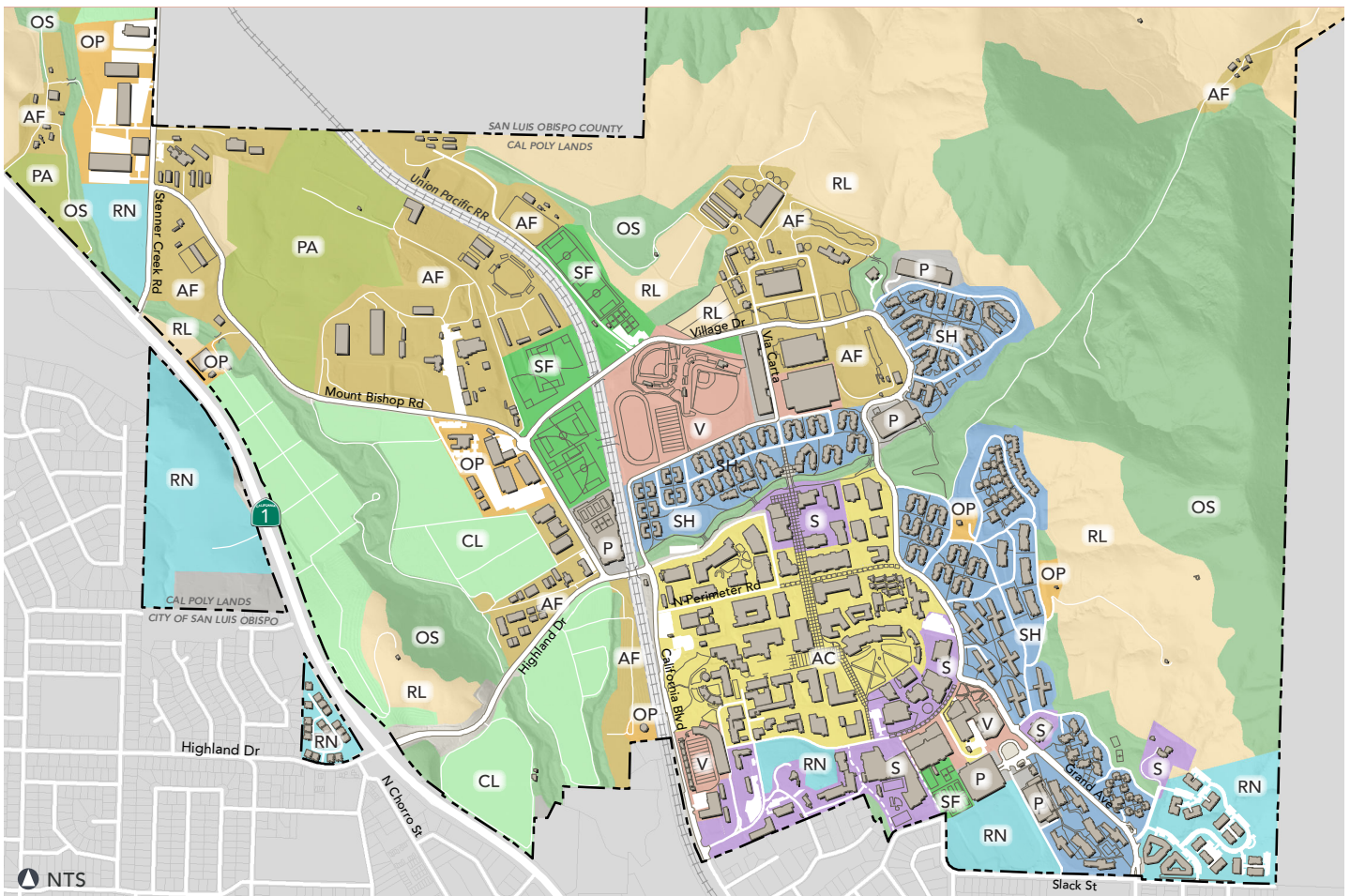


Figure 5.1 Cal Poly Master Plan Land Use Map

Source: Cal Poly Master Plan

Legend

Academic Core (AC)	Services (S)	Rangeland (RL)
Student Housing (SH)	Operational (OP)	Open Space (OS)
Residential Neighborhoods (RN)	Agriculture Facility (AF)	Parking (P)
Venues (V)	Cropland (CL)	
Sports Fields (SF)	Pasture (PA)	



1. VIA CARTA

Via Carta is one of the primary north/south pedestrian and bicycle corridors for the campus. With the growing campus population, Via Carta will eventually serve as the central spine of campus, presenting opportunities to create an efficient corridor for quick travel, interactive gathering spaces, and other activities such as commercial, education, dining, and residential spaces. (Cal Poly, 2017, p.28-29)

This site will be broken up into two sections:

- » Farm Shop
- » H Parking Lot

1.1 EXISTING FARM SHOP

The current underutilized farm shop has the potential to transform into a destination that can operate as an open-air venue for an on-campus farmers market or food vendors.

Prime location



The farm shop is conveniently located between the main campus and Poly Canyon Village (PCV), and would provide an immense opportunity to make the walk between PCV and the main campus more interesting and engaging. The farm shop could capture students on the way back home and allow them to pick up groceries or other necessities that they need without having to go out of their way. Additionally, the convenient location of the Farm house would provide minimal disruption to the path of students, and would be relatively inexpensive to implement, as the building already exists.

The revitalization of the farm shop would create a more lively environment for students, faculty, and community members to engage in, and would also serve as a node that enhances the path connecting student housing to the campus core.



Figure 5.2 View of farm shop and bike/pedestrian path toward PCV



Figure 5.3 Existing farm shop



Figure 5.4 Revitalized farm shop that would serve students, faculty, and community members

Source: Archimatrix

1.2 H PARKING LOTS

According to the campus Master Plan, several of the existing parking lots directly north-west of the farm shop will be converted into housing primarily for staff and faculty. However, this would be an excellent opportunity to integrate student housing as well. The new buildings would complement the farm shop by providing housing and other services and amenities that reflect both faculty and student needs, such as hybrid live-learn spaces, dining options, recreational facilities, and office spaces.

Live-learn spaces

New and improved study spaces alongside housing encourages innovative thinking and creative development. Live-learn spaces integrated into multistory buildings can be comprised of co-working studios, computer labs, or meetings rooms for research and collaboration. These progressive hybrid live-learn spaces aim to improve student connection with peers and faculty of different majors, promoting an interdisciplinary learning environment. Figure 5.5 shows an example of an innovative learning lab.

The addition of these spaces and applicable technologies would further support student learning while reflecting Cal Poly's academic mission and Master Plan principle of incorporating "cross-disciplinary learning space[s]" (Cal Poly 2017).

Resourceful

As an agricultural college, the farm shop can serve as a designated venue that sells fresh produce grown on Cal Poly lands. Providing locally sourced food for students reduces green house gases associated with food transport. Providing additional options for on-campus grocery shopping would also reduce the need to travel off-campus. The reuse of an old building for this space would also align with new-urbanist principles and Cal Poly's sustainability goals.

Selling Cal Poly produce and renting out space to vendors would also help stimulate the local economy. The new market would be open to community members, which in turn strengthens Cal Poly's relationship with the rest of the City.

Many colleges, including Cal Poly Pomona and Portland State University, already host on-campus farmers markets catered to students, faculty, and community members. Figure 5.4 illustrates a vision of what the revitalized farm shop may look like. Fresh fruits and vegetables would be readily available to all.



Figure 5.5 Innovative learning labs

Source: McGill University



Figure 5.6 Proposed dining area & study lounge on 1st & 2nd floors
Source: Portland State University

A new dining hub



Additional dining options, such as restaurants, cafes, and coffee shops can be integrated into ground floor uses to capture students walking to and from class. Dining can be integrated with study lounges to promote a disperse crowds as shown in figure 5.6. Currently, Campus Market is the only dining option near this part of campus. A bar or brewery can also be included to accommodate seniors and graduate students to facilitate vibrant nightlife on campus.

Rather than relying on off-campus facilities to meet their needs, which usually results in additional vehicle miles traveled (VMT), these services and amenities would be within walking or biking distance. Reducing VMT aligns with the sustainability design objective, as well as Cal Poly's goal to reduce carbon emissions. Moreover, additional housing and complimentary amenities would foster a more residential campus by inciting students to live on campus for multiple years. The addition of businesses would also improve capital flow on campus and provide more job opportunities for students.

Additional recreation



Currently, most of Cal Poly's recreational activities are concentrated near the University Union, such as the Mustang Lanes bowling alley, dining halls, and the Recreation Center. Thus, integrating more uses that support recreational activities at the northern part of campus would benefit a larger population of the student body. Activities can include a projection screen for outdoor movie screening, basketball and racquetball courts, and other interactive and flexible urban spaces for students to utilize. The integration of recreational activities would aid in the implementation of Cal Poly's Master Plan goals of offering "more vibrant evening and weekend events and activities on campus" (Cal Poly 2017).



Figure 5.7 Outdoor movie screening
Source: Brown University



Figure 5.8 Example co-working office space

Source: Hera Hub

Co-working Spaces & Professional Development



Private companies and organizations can operate out of campus grounds where they readily utilize student talent. Likewise, students working with these companies will be able to gain extremely valuable hands-on learning experience in a real-world setting. Many urban campuses, including Portland State University (PSU), partner with local businesses and organizations to innovate and share ideas. These partnerships strengthen the University's relationship with the City and promote a knowledge-based economy.

Cal Poly's existing Technology Park currently serves this purpose; however, it is located on the outskirts of the University, isolated from the campus core and the majority of the student body. Therefore, there is a physical disconnect between students and the Technology Park. Integrating co-working office spaces into mixed-use buildings located closer to students and other facilities would foster a more effective and engaging educational and professional working environment.

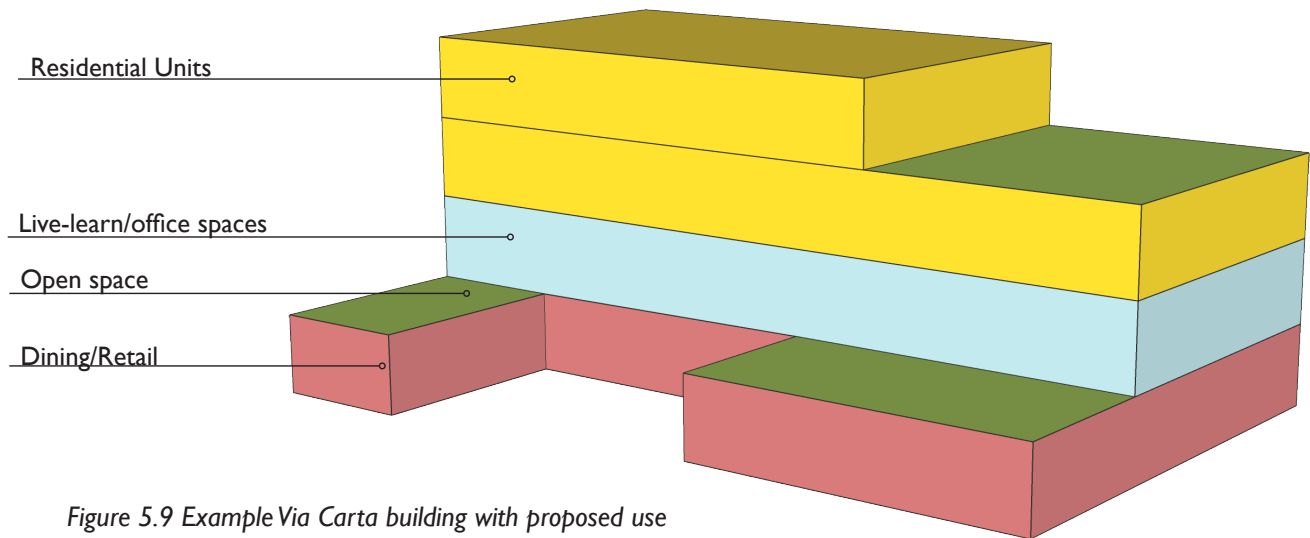


Figure 5.9 Example Via Carta building with proposed use

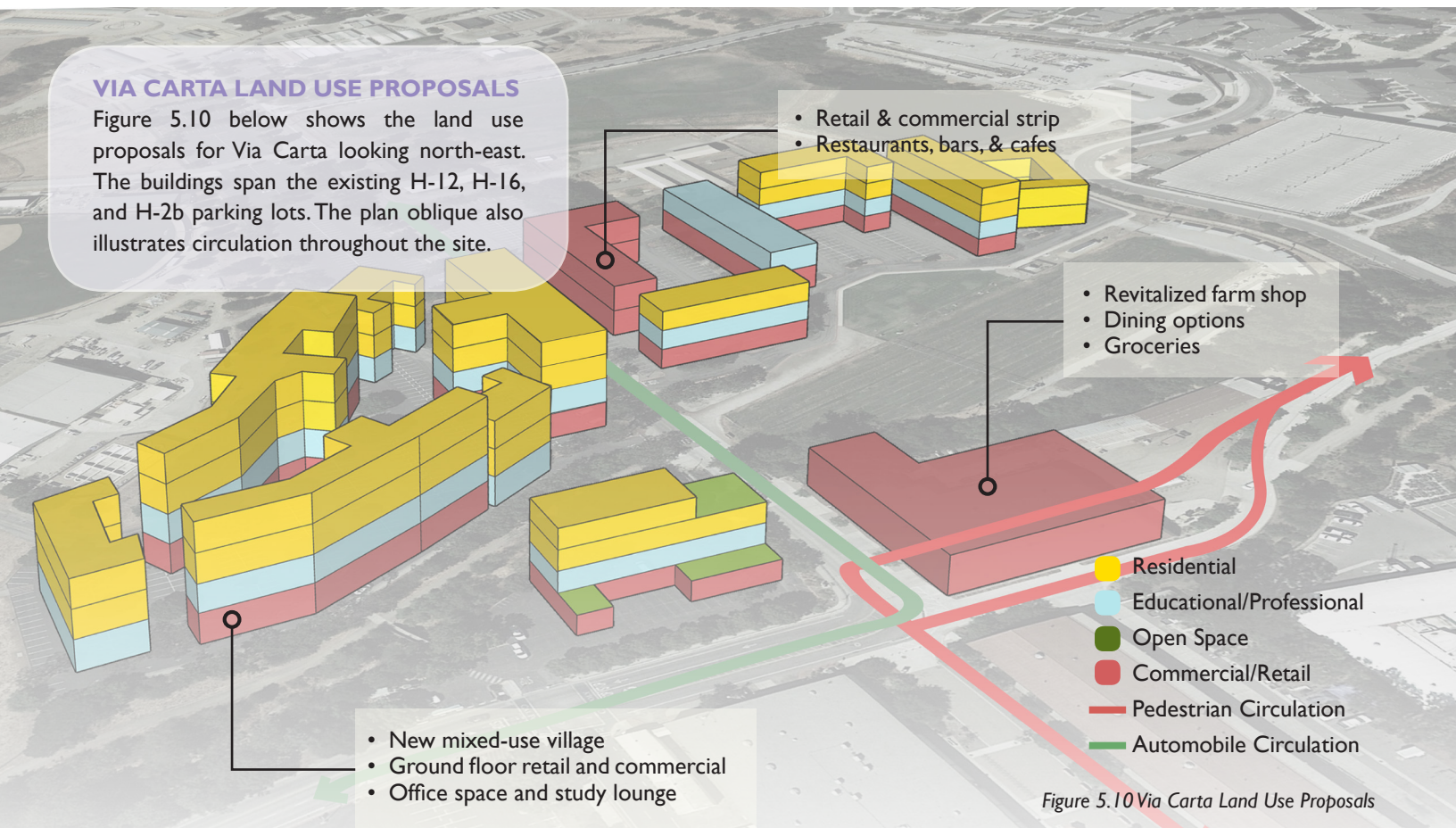


Figure 5.10 Via Carta Land Use Proposals



2. WALTER F. DEXTER

Dexter Lawn is considered one of the main hubs on campus and is commonly regarded as a “gathering space, a meeting place, and a convergence of campus life” (Cal Poly, 2017). According to the Master Plan, Cal Poly wishes to create a ‘heart of campus’ by expanding Dexter Lawn to Via Carta in an effort to improve connectivity throughout campus. Cal Poly intends to renovate the buildings surrounding Dexter Lawn, including the Dexter Building and Building 21, which creates a great opportunity reevaluate the land use types and intensities around the space.

DEXTER REDEFINED

Currently, Dexter Lawn is busy throughout the day, accommodating a wide range of activities. However, during the night hours, the area becomes dark and quiet, presenting an opportunity to improve lighting and increase the use of the space at night. Additionally, students mentioned in the survey that they would like additional dining options around the area. Similar to the Via Carta proposal, incorporating more permanent establishments in the ground floor, such as small restaurants, cafes, or coffee shops will serve students as well as faculty who spend a lot of time on this side of campus. Introducing new establishments to the area would be beneficial, as it would improve public safety and create a more vibrant and lively nighttime environment.



Figure 5.11 Dexter Lawn



Ground floor uses

The life of an urban space depends largely on the ground floor uses of the buildings around it. In a traditional urban setting, retail and restaurants are common ground floor establishments used to generate activity at the street level. These types of spaces are active during different hours of the day, promoting various types of activity within the area.

Beyond 9 to 5

There are several benefits to activating the space around Dexter Lawn around the clock. The first and most noticeable change will be the increase in number of students using Dexter Lawn during nighttime hours. Currently, lighting and facilities around Dexter Lawn is very limited, and the space is only lively during the daylight hours. The concept of ground floor spaces in cities can be transferred to university spaces. Bars, restaurants, and 24 hour study spaces are all examples of land uses that generate activity at night. Additionally, special events such as Taco Tuesdays or Trivia Nights can be held during certain days of the week to encourage the use of the space during off-peak periods. Making such changes will encourage a more vibrant and social atmosphere at night.



Figure 5.12 Dexter serving as a multi-functional space



Figure 5.13 Outdoor Seating Space

Space Identity

Any changes to the already successful Dexter Lawn will be a sensitive topic to many students. Therefore, it is important to maintain the core identity of the area as an open space. In our proposed changes, we wish to maintain the versatility that Dexter Lawn currently offers, and to keep it as a multi-purpose recreational space. Keeping Dexter Lawn as an open space would allow student-run organizations to host a wide variety of events during both daytime and nighttime hours.

Student Expression

The new design of Walter F. Dexter Building (Building 34) can include an atrium with a courtyard on the ground floor that can be dedicated to a student art exhibit that can showcase student work and projects. Unlike the other galleries and student exhibition spaces in the area, this will not be limited to a particular college, but will showcase the creativity of all the students in the University.

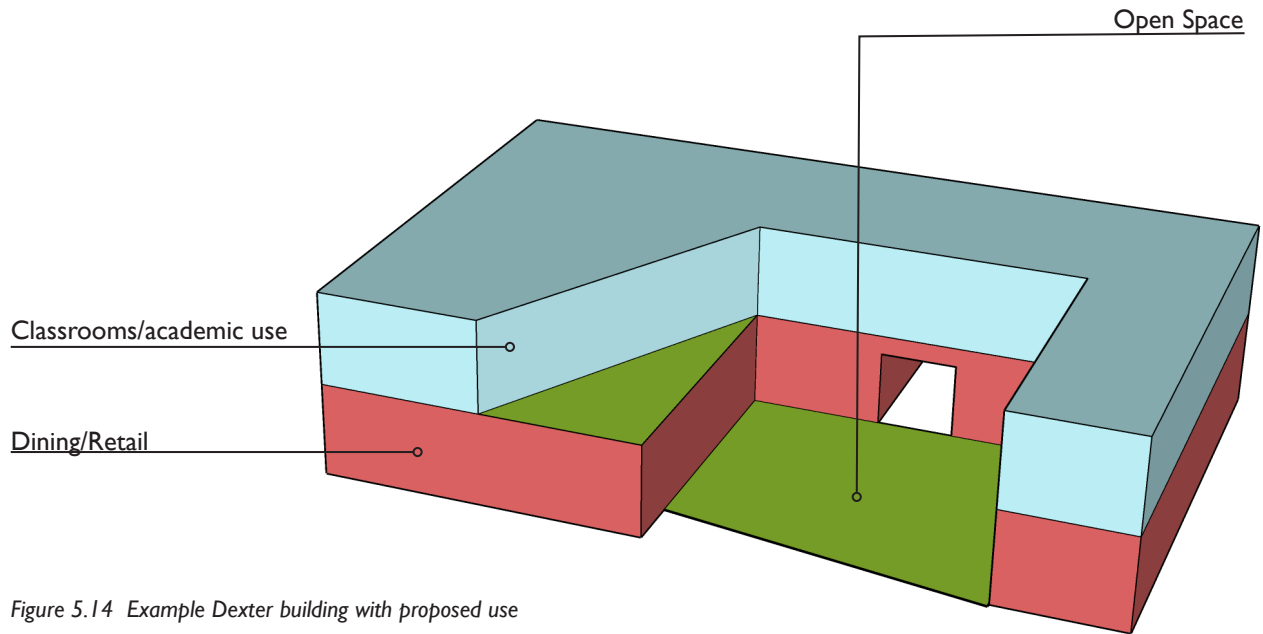


Figure 5.14 Example Dexter building with proposed use

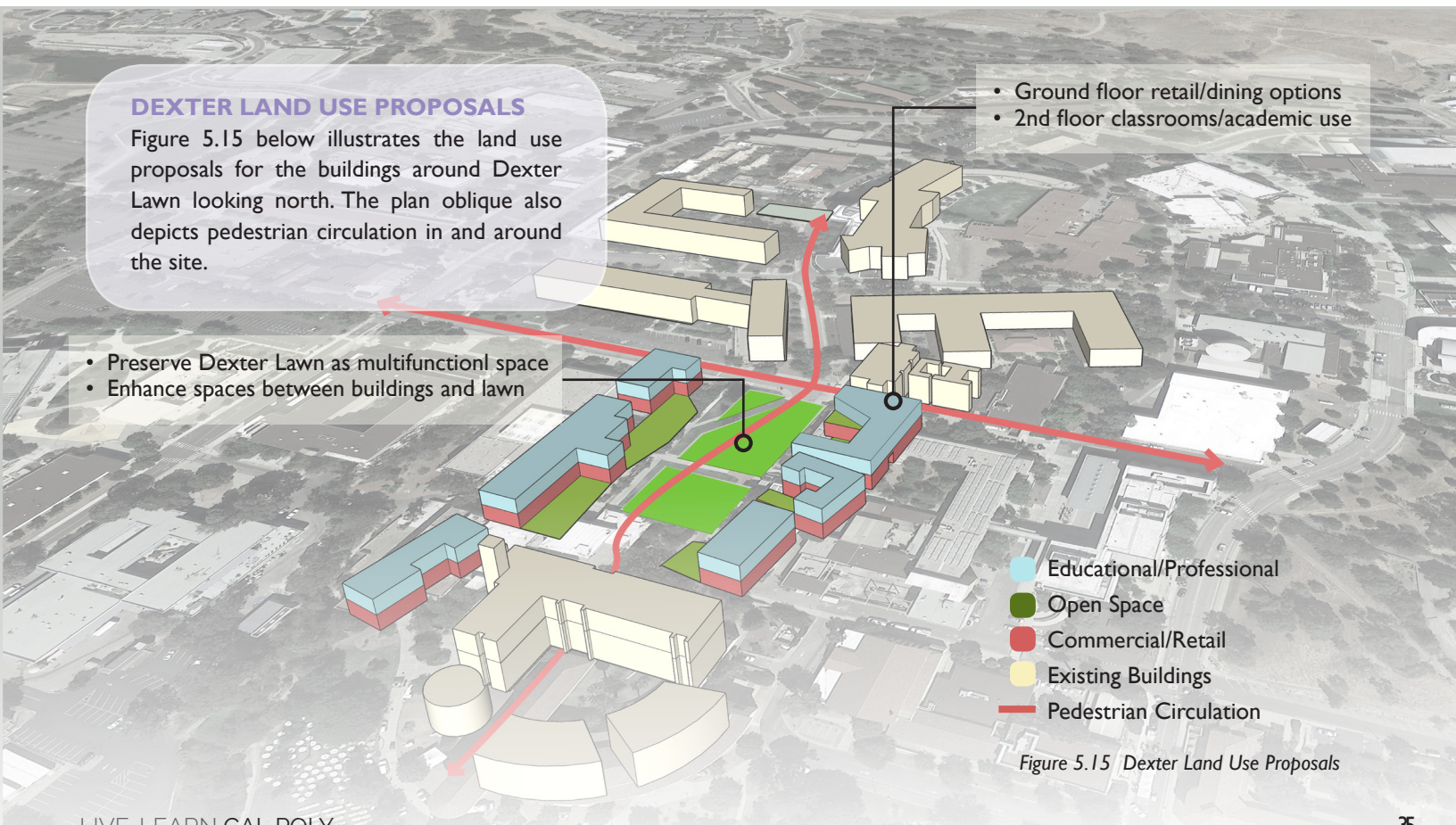


Figure 5.15 Dexter Land Use Proposals



FINAL THOUGHTS

Universities should look at campus design through the lens of urban planning and development; although universities are comparably smaller in scale, they share many similar characteristics with cities. From the location of buildings and infrastructure to effective design and placemaking, universities face the same challenges cities do, such as housing diversity and ensuring inclusivity and equity.

What makes universities unique, however, is the selective demographic makeup of its attendees. Students who attend universities are likely to be 18 - 25 years old, all with similar mindsets - to achieve academic enrichment and social fulfillment. Thus, universities must be able to understand student needs in order to support their endeavors. The design of places, land uses, as well as level of engagement, all affect student experience and how they interact inside and outside of classrooms.

With Cal Poly increasing rapidly in size, future development must be able to accommodate projected growth. New Urbanism, a movement that has been integral in modern day planning and design, can also be applied in the context of universities. Campuses should continue to promote compact-mixed-use development to create healthy, livable, and sustainable places for students.

The proposed land uses in Chapter Five provided examples of how Cal Poly can adopt a mixed-use initiative to reflect new-urbanist principles. The mixture of uses in a building, ranging from residential to office, improves efficiency, stimulates the local sub-economy, promotes sustainability, and enhances the overall quality of life.

Although this report focuses primarily on specific land uses, land use decisions have the ability to affect social, academic, and recreational functions. It impacts mobility, health, and safety, and influences how we interact with the built and natural environment. Most importantly, land use can directly impact a person's well-being. In the end, the driving force behind New Urbanism as well as our land use proposals is to create environments for students to not only live in, but to thrive in.

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